

REMARKS

The Examiner is thanked for providing a response to the arguments made in Applicant's communication filed January 2, 2008. No claims have been amended, canceled, added, or withdrawn. No new matter has been added. Therefore, Claims 1-41 are pending in the application.

Each issued raised in the Office Action is addressed hereinafter.

CLAIM REJECTIONS – 35 U.S.C. § 103

Claims 1, 7-8, 21, 27-28 and 41 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Barrett, Jr. et al. (US 6,473,772) (hereinafter "*Barrett*") in view of Yalamanchi et al. (US 2003/0212670) (hereinafter "*Yalamanchi*") and Ling Liu et al. ("Continual Queries for Internet Scale Event-Drive Information Delivery", IEEE Transactions on Knowledge and Data Engineering, Vol. 11, No. 4, Jul/Aug 1999, pp. 610-628) (hereinafter "*Liu*").

Claims 2-6, 9-20, 22-26 and 29-40 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Barrett* in view of *Yalamanchi* and *Liu* and Kumar et al. (US 7,149,738) (hereinafter "*Kumar*").

These rejections are respectfully traversed.

CLAIM 1

In Applicants' prior communication filed January 2, 2008, it was explained at pages 16-17 why *Barrett* does not teach or suggest the following limitation of Claim 1 related to detecting the occurrence of a particular type of event:

detecting that said first event is an occurrence of said event by comparing said first event to said event structure and determining that said first event corresponds with said event structure based on said set of attributes defined by said event structure that describe features of a corresponding event,

The Office Action agrees that *Barrett* does not teach or suggest the portion of the above limitation reciting "determining that said first event corresponds with said event structure based on said set of attributes defined by said event structure that describe features of a corresponding event". (Office Action, page 4.) Instead, the Office Action alleges that this portion of the limitation is satisfied by *Liu* and that the entire limitation is satisfied by the combination of *Barrett* and *Liu*. (*Id* at pages 5-6.) Thus, the rejection of the above limitation is based on *Barrett* teaching or suggesting the portion of the limitation that recites "detecting that said first event is an occurrence of said event by comparing said first event to said event structure".

Further, the Office Action at page 4 contends that *Barrett* teaches the following limitation of Claim 1 related to what occurs when an occurrence of an event is detected:

based on said detecting, selecting said first set of one or more conditions for evaluation
against said first event,

Claim 1 requires that the "first set of one or more conditions for evaluation against said first event" be identified in a received expression that identifies the event structure, the one or more conditions related to the event structure, and one or more action preferences in association with the event structure. Thus, the Office Action's rejection of Claim 1 is founded on *Barrett* teaching or suggesting the following limitations:

receiving an expression that identifies an event structure, a first set of one or more
conditions related to said event structure, and one or more action preferences in
association with said event structure,
during a database session,
receiving a first event,
detecting that said first event is an occurrence of said event by comparing said
first event to said event structure, and

based on said detecting, selecting said first set of one or more conditions for evaluation against said first event,

It is respectfully submitted that the above limitations of Claim 1 are not taught or suggested by *Barrett*.

As a preliminary matter, it should be noted that the Office Action does not indicate what thing in *Barrett* is supposed to be the claimed "**expression** that identifies an event structure, a first set of one or more conditions related to said event structure, and one or more action preferences in association with said event structure". The Office Action merely states that the limitation of Claim 1 reciting "receiving an expression that identifies an event structure, a first set of one or more conditions related to said event structure, and one or more action preferences in association with said event structure" is disclosed in the Abstract of *Barrett*, along with col. 7, lines 9-17 of *Barrett*.

Barrett Abstract states:

A method and apparatus for dynamically driving events in a simulation of a data processing system are implemented. Events, or system states, are generated by drivers located at predetermined locations within the simulation model under test. These events, which are drawn from a predetermined class of events, termed "effects," are driven in response to other events observed by monitors disposed within the simulation model in accordance with a predetermined set of "causes," and a set of "rules" that map causes to effects. The driving of events is mediated by a library process that receives observed events from the monitors, in the form of data structures, stored them in a database, and passes the effects to be driven to the appropriate driver in accordance with the set of rules, also data structures stored in the database, when a cause corresponds to a observed event.

Barrett at col. 7, lines 9-17 states:

Effects are specified via an event structure 550, illustrated in FIG. 5D. Effects constitute a stream of action events that are driven in response to a corresponding cause. The association of a cause and an effect is made via a rule structure, to be discussed. Effect structure 550 includes a plurality of entries 551. A number of entries is determined by the corresponding number of action events which the effect structure embodies.

Unfortunately the Office Action does not identify what element in these portions of *Barrett* is considered to be the claimed "expression". For the purposes of argument, the Applicant assumes the rejection is based on equating "data structures" described in *Barrett* with the "expression" recited in Claim 1. If this is not the case, then the Applicant respectfully requests that the Examiner issue another Office Action that actually states what, within *Barrett*, is supposed to be the claimed "expression".

It is respectfully submitted that the data structures described in *Barrett* do not satisfy the limitation of Claim 1 reciting "receiving an expression that identifies an event structure, a first set of one or more conditions related to said event structure, and one or more action preferences in association with said event structure". First of all, one skilled in the art would not equate a data structure with an expression. Second, even if one skilled in the art would reasonably construe a data structure to teach or suggest an expression, the data structures in *Barrett* do not identify "an event structure, a first set of one or more conditions related to [the] event structure, and one or more action preferences in association with [the] event structure", as claimed.

While *Barrett* does teach a rule structure that maps cause events to effect events, the rule structure cannot be the claimed event structure. This is because it doesn't make sense to detect an occurrence of an event by comparing a received event to the rule structure of *Barrett*. The rule structure in *Barrett* comprises only identification information that maps cause events to effect events by their identification numbers. (See, *Barrett*, FIG. 5E.) A received event in *Barrett* is represented by a "library event data structure" which consists of the location on a

hardware bus on which the event has taken place, the memory address of the event, the transaction type, such as a read or write, and the size of any data transfer. (*Barrett*, col. 5, lines 55-60, along with FIG. 4B.)

It is meaningless for the purpose of detecting the occurrence of an event to compare the library event data structure described in *Barrett* with the rule structure described in *Barrett* because the rule structure does not define a set of attributes that define features of a corresponding event. Specifically, the rule structure contains no information that can be meaningfully compared with the location, address, type, and size information contained in the library event data structure. Indeed, nowhere in *Barrett* is it taught or suggested that the library event structure of *Barrett* is compared to the rule structure of *Barrett*. Therefore, the rule structure of *Barrett* cannot be the claimed "event structure" in the "expression that identifies an event structure, a first set of one or more conditions related to said event structure, and one or more action preferences in association with said event structure" because Claim 1 explicitly requires "detecting that said first event is an occurrence of said event by comparing said first event to said event structure" and *Barrett* does not teach or suggest detecting that a received library event data structure is an occurrence of an event by comparing the library event data structure to the rule structure.

In view of the foregoing, it is respectfully submitted that at least one of the following limitations of Claim 1 is not taught or suggested by *Barrett*:

- receiving an expression that identifies an event structure, a first set of one or more conditions related to said event structure, and one or more action preferences in association with said event structure,
- during a database session,
- receiving a first event,
- detecting that said first event is an occurrence of said event by comparing said first event to said event structure, and

based on said detecting, selecting said first set of one or more conditions for evaluation against said first event,

Given the Examiner's sole reliance on *Barrett* for the above limitations it is respectfully submitted that Claim 1 is patentable over the combination of *Barrett*, *Yalamanchi*, and *Liu*. Removal of the rejection of Claim 1 is respectfully requested.

CLAIM 2

Claim 2 depends from Claim 1 and includes all of the limitations of Claim 1. It is therefore respectfully submitted that Claim 2 is patentable over *Barrett*, *Yalamanchi*, and *Liu* for at least the reasons set forth herein with respect to Claim 1. Furthermore, it is respectfully submitted that Claim 2 recites additional limitations that independently renders it patentable over *Barrett*, *Yalamanchi*, *Liu*, and *Kumar*.

For example, Claim 2 further requires "wherein said event structure is represented as an object type in said database." The Office Action asserts that this limitation is disclosed in *Kumar* at col. 14, lines 35-47. However, this portion of *Kumar* merely discloses data of an event definition in XML format and does not disclose representing a type of event as an object type in the database. Specifically, XML formatted data, by itself, is not a definition of a data type that may be used by a database to type data. As one skilled in the art would understand, a data type may be represented as an object type in a database by defining a new composite type that comprises one or more basic primitive types. For example, the following database statement disclosed in paragraph [0023] of the Specification can be executed to create a new object type "AddFlight" that represents **a type of data**.

```
CREATE or REPLACE TYPE AddFlight AS OBJECT (  
    CustId    NUMBER,
```

Airline VARCHAR(20),
FromCity VARCHAR(30),
ToCity VARCHAR(30),
Depart DATE,
Return DATE).

Simply formatting data as XML does not create a new database data type. Further, XML formatted data does not represent an object type in a database. Consequently, it is respectfully submitted that the limitation of Claim 2 reciting "wherein said event structure is represented as an object type in said database" is not taught or suggested by *Kumar*.

CLAIM 3

Claim 3 depends from Claim 1 and includes all of the limitations of Claim 1. It is therefore respectfully submitted that Claim 3 is patentable over *Barrett*, *Yalamanchi*, and *Liu* for at least the reasons set forth herein with respect to Claim 1. Furthermore, it is respectfully submitted that Claim 3 recites additional limitations that independently renders it patentable over *Barrett*, *Yalamanchi*, *Liu*, and *Kumar*.

For example, Claim 3 further features "wherein receiving an expression comprises receiving an expression that identifies said event structure as a composite event structure having two or more primitive events that are each represented, in said database, as an object type embedded in said composite event structure." The Office Action asserts that this limitation is disclosed in *Kumar* at Fig. 11, showing a "Composite" event radio button. (Office Action, page 8.) While *Kumar* does teach "a composite event structure", nowhere in *Kumar* is it taught or suggested that the composite event structures are represented in a database "as an object type embedded in said composite event structure". Consequently, it is respectfully submitted that the limitation of Claim 3 reciting "wherein receiving an expression comprises receiving an

expression that identifies said event structure as a composite event structure having two or more primitive events that are each represented, in said database, as an object type embedded in said composite event structure" is not taught or suggested by *Kumar*.

CLAIM 7

Claim 7 depends from Claim 1 and includes all of the limitations of Claim 1. It is therefore respectfully submitted that Claim 7 is patentable over *Barrett*, *Yalamanchi*, and *Liu* for at least the reasons set forth herein with respect to Claim 1. Furthermore, it is respectfully submitted that Claim 7 recites additional limitations that independently renders it patentable over *Barrett*, *Yalamanchi*, and *Liu*.

For example, Claim 7 recites "wherein receiving an expression comprises receiving an expression that identifies an event structure derived from structure of tables, in said database, that store data that represent event occurrences." The Office Action contends that this limitation is disclosed in *Barrett* Abstract as a result of discussing storing data structures in a database that map causes to effects. (Office Action, page 6.) First, the Office Action does not identify what in *Barrett* is supposed to be the claimed "expression that identifies an event structure derived from structure of tables, in said database, that store data that represent event occurrences". Second, nothing in *Barrett* teaches or suggests that the data structures of *Barrett* that map causes to effects are "derived from structures of tables, in [a] database, that store data". Consequently, it is respectfully submitted that the limitation of Claim 7 reciting "wherein receiving an expression comprises receiving an expression that identifies an event structure derived from structure of tables, in said database, that store data that represent event occurrences" is not taught or suggested by *Barrett*.

CLAIM 8

Claim 8 depends from Claims 1 and 7 and includes all of the limitations of Claims 1 and 7. It is therefore respectfully submitted that Claim 8 is patentable over *Barrett*, *Yalamanchi*, and *Liu* for at least the reasons set forth herein with respect to Claims 1 and 7. Furthermore, it is respectfully submitted that Claim 8 recites additional limitations that independently renders it patentable over *Barrett*, *Yalamanchi*, and *Liu*.

For example, Claim 8 recites "wherein detecting that said first event is an occurrence of said event comprises detecting that said data underwent a change and that said change constitutes an occurrence of said event." The Office Action alleges that this limitation is disclosed in *Barrett* Abstract as a result of discussing storing data structures in a database that map causes to effects. (Office Action, page 6.) However, the "data" recited in Claim 8 refers to the data of Claim 7 stored in database tables. Thus, Claim 8 is about detecting the occurrence of an event by detecting a change to data stored in one or more database tables. *Barrett* teaches nothing about detecting event occurrences by detecting changes to database data. Consequently, it is respectfully submitted that the limitation of Claim 8 reciting "wherein detecting that said first event is an occurrence of said event comprises detecting that said data underwent a change and that said change constitutes an occurrence of said event" is not taught or suggested by *Barrett*.

CLAIM 12

Claim 12 depends from Claim 1 and includes all of the limitations of Claim 1. It is therefore respectfully submitted that Claim 12 is patentable over *Barrett*, *Yalamanchi*, and *Liu* for at least the reasons set forth herein with respect to Claims 1 and 7. Furthermore, it is respectfully submitted that Claim 12 recites additional limitations that independently renders it patentable over *Barrett*, *Yalamanchi*, *Liu*, and *Kumar*.

For example, Claim 12 features a "database view". The Office Action equates the GUIs as disclosed in Figures 12, 13, and 14 of *Kumar* with the claimed "database view". However, one skilled in the art would not reasonably equate a graphical user interface with a database view. One skilled in the art might reasonably understand a database view to be a dynamic or virtual database data container that is computed or constructed from database data. However, one skilled in the art could not reasonably construe a dynamic or virtual database data container with a graphical user interface. In any event, figure 12 provides an interface for specifying the details of a **new** temporal event and not "a list of event occurrences **that have been determined** to satisfy any of said conditions from said first set". Figure 13 provides an interface for specifying the details of a **new** condition and not "a list of conditions from said first set **that have been satisfied** by event occurrences in said list of event occurrences". Figure 14 provides an interface for specifying the details of a new action and not "a list of action preferences that correspond with conditions in said list of conditions." Consequently, it is respectfully submitted that the limitations of Claim 12 are not taught or suggested by *Barrett*.

REMAINING CLAIMS

The pending claims not discussed so far are dependant claims that depend on an independent claim that is discussed above. Because each dependant claim includes the features of claims upon which they depend, the dependant claims are patentable for at least those reasons the claims upon which the dependant claims depend are patentable. Removal of the rejections with respect to the dependant claims and allowance of the dependant claims is respectfully requested. In addition, the dependent claims introduce additional features that independently render them patentable. Due to the fundamental differences already identified, a separate discussion of those features is not included at this time.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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